

WHAT IS CLAIMED IS:

1. An image pickup apparatus comprising:

lens group drive means for driving a lens
group to thereby adjust every focal point of said lens
5 group;

image pickup means for image picking-up one
and the same subject to generate a plurality of screens
adjacent temporally and different in exposure
condition, said plurality of screens being synthesized
10 to form a synthesized image;

means for detecting focal voltages from said
plurality of screens and storing said detected focal
voltages, said focal voltages containing high-frequency
components included in said plurality of screens; and

15 focal voltage selecting means for selectively
outputting one of said stored focal voltages on the
basis of a predetermined selection criterion;

wherein automatic focusing is carried out in
accordance with said focal voltage outputted from said
20 focal voltage selecting means.

2. An image pickup apparatus according to Claim
1, wherein normalization processing is carried out on
each of said focal voltages detected from said
plurality of screens adjacent temporally and different
25 in exposure condition so that an influence of variation
in said exposure condition on said focal voltages is
eliminated.

3. An image pickup apparatus according to Claim

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1, wherein in said automatic focusing, said focal
voltage selecting means keeps on outputting said focal
voltage outputted at the time of starting to drive said
lens group in a period from starting of drive of said
5 lens group to conclusion of reaching focus to thereby
stop moving said lens group.

4. An image pickup apparatus according to Claim
1, wherein said focal voltage selecting means
selectively outputs a focal voltage for focusing in
10 accordance with magnitudes of said stored focal
voltages inputted to said focal voltage selecting
means.

5. An image pickup apparatus according to Claim
1, wherein said focal voltage selecting means
15 selectively outputs a focal voltage for focusing on the
basis of comparison among luminance level frequency
distributions belonging to said screens respectively
associated with said stored focal voltages inputted to
said focal voltage selecting means.

20 6. An image pickup apparatus according to Claim
1, wherein said focal voltage selecting means varies
said selection criterion in accordance with luminance
level frequency distributions belonging to said screens
respectively associated with said stored focal voltages
25 inputted to said focal voltage selecting means.

7. An image pickup apparatus according to Claim
1, wherein:

said means for storing said focal voltages

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detected from said plurality of screens extracts
specific areas from said plurality of screens to be
focused, on the basis of information of luminance level
distributions expressing characteristics of said
5 subject, or on the basis of information of substitute
areas or a synthesizing ratio in synthesis, or on the
basis of a combination of said information of luminance
level distributions and said information of substitute
areas or a synthesizing ratio, said information of
10 luminance level distributions being obtained from said
plurality of screens adjacent temporally and different
in exposure condition, said information of substitute
areas or a synthesizing ratio being obtained when said
synthesized image is generated; said means detects
15 focal voltages from said extracted specific areas of
said plurality of screens; and said means stores said
detected focal voltages.

8. An image pickup apparatus according to Claim
1, wherein when said exposure condition associated with
20 said focal voltage outputted from said focal voltage
selecting means varies, an offset from the focal point
is calculated again, and a series of control in a
period from starting of drive of said lens group to
stopping of the drive when a focused point is detected
25 is performed again.

9. An image pickup apparatus comprising:
lens group drive means for driving a lens
group to thereby adjust every focal point of said lens

group;

image pickup means for image picking-up one and the same subject to generate a plurality of screens adjacent temporally and different in exposure

5 condition, said plurality of screens being synthesized to generate a synthesized image;

means for cutting out predetermined-sized areas from said plurality of screens respectively;

means for detecting focal voltages, which are
10 high-frequency components contained in said areas cut out from said plurality of screens, and for storing said detected focal voltages; and

focal voltage selecting means for comparing said stored focal voltages, and selectively outputting
15 one of said focal voltages on the basis of a predetermined selection criterion;

wherein automatic focusing is carried out in accordance with said focal voltage outputted from said focal voltage selecting means.

20 10. An image pickup apparatus according to Claim 9, wherein normalization processing is carried out on each of said focal voltages detected from said areas cut out from said plurality of screens adjacent temporally and different in exposure condition so that
25 an influence of variation in said exposure condition or said cut-out area on said focal voltages is eliminated.

11. An image pickup apparatus according to Claim 9, wherein in said automatic focusing, said focal

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5 stop moving said lens group.

10 voltages inputted to said focal voltage selecting means.

15 basis of comparison among luminance level frequency
distributions belonging to said areas cut out from said
screens respectively associated with said stored focal
voltages inputted to said focal voltage selecting
means.

14. An image pickup apparatus according to Claim 9, wherein said focal voltage selecting means varies said selection criterion in accordance with luminance level frequency distributions belonging to said areas cut out from said screens respectively associated with said stored focal voltages inputted to said focal voltage selecting means.

15. An image pickup apparatus according to Claim 9, wherein when said exposure condition or said cut-out

area associated with said focal voltage outputted from
said focal voltage selecting means varies, an offset
from the focal point is calculated again, and a series
of control in a period from starting of drive of said
5 lens group to stopping of the drive when a focused
point is detected is performed again.

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